

ABSTRACT

Title of dissertation: **SOCIAL PHOBIA AND OCCUPATIONAL
FUNCTIONING**

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Although there is substantial research on the psychopathology and social functioning of socially anxious adults, there has been little effort to study how this disorder impacts occupational functioning. The few studies that exist to date indicate that adults with social phobia have impaired occupational functioning due to their social fears. For example, 92.3% of one socially phobic sample reported some type of occupational impairment (Turner et al., 1986) and in another study, social fear affected attainment of employment and acceptance of job offers or job promotions (Stein et al., 2000). Objective: This study was designed to further elucidate the type of occupational impairment found among those with social phobia by conducting a comparison to a non-anxious control group. Method: Study participants were those who meet DSM-IV diagnostic criteria for a primary diagnosis of Social Phobia and work at least 20 hours a week. Semi-structured interviews were used to diagnose psychiatric disorders. In addition, self report measures and a daily work diary will be used to examine anxiety, satisfaction with work, and work behaviors. Results: Socially phobic patients were significantly less likely to initiate conversations and engage in interactions with coworkers. Likewise, they reported higher levels of anxiety than non-anxious controls

during interactions. Their anxiety prevented their ability to communicate with coworkers, despite a desire to do so. They also report greater hardship in relationships at work in comparison to normal controls. Conclusions: Additional studies on the relationship between anxiety and work functioning are needed. Treatments developed to increase work functioning are warranted. The findings of this study have implications for organizational interventions aimed at increasing quality of work life and work related social functioning for employees with social anxiety.

SOCIAL PHOBIA AND OCCUPATIONAL FUNCTIONING

by

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Introduction

Anxiety disorders are among the most common psychiatric disorders in the general population. Often considered as “not severe”, the annual cost of these disorders to the general public in 1990 was approximately 42.3 billion dollars (\$1542 per sufferer; Greenberg et al., 1999). Anxiety disorders accounted for 10% of indirect job costs and of this cost 88% was due to lost productivity while at work. Additionally, with the exception of simple phobia, all of the anxiety disorders were associated with workplace impairment although details were not reported. Even though scientific attention to occupational impairments caused by social anxiety has been limited, there are some data regarding occupational functioning and related constructs that may illuminate potential avenues for investigation into social phobia (Appendix 1. Literature Review).

There is some support for a relationship between social inhibition and work impairment and several studies have examined the impact of shyness, a construct related to, but not identical to, social phobia.. Caspi et al. (1988) examined the age by which shy and non-shy participants in the United States first entered stable careers defined as holding a functionally related job for at least 6 years. Results revealed that history of childhood shyness had a negative effect on occupational achievement and occupational stability. Specifically, among males, childhood shyness predicted delayed entry into a stable career, which predicted lower occupational achievement and occupational stability. With regard to occupational impairment among women, 56% of those with a childhood history of shyness versus 36% of normal controls were more likely either to have no work history or to terminate employment at marriage or childbirth with no later reentry into the labor force.

In addition to lower levels of stable employment and a later time of entry to establish occupational stability, Phillips and Bruch (1988) reported that shy participants produced fewer interpersonally oriented occupations when asked to list specific occupations in which they were interested, thereby suggesting that shyness was related to specific occupational choice as well. Furthermore, in that study, shy participants were significantly less likely to seek career information and were significantly more undecided about their career choice. Moreover, when compared to those who were not shy, both shy men and women expected assertive behaviors to be less helpful in creating a favorable impression and expected that they would be less likely to engage in self-expressive behaviors during an interview. Thus, there is some evidence for a relationship between shyness and work impairment. Below, the few investigations that have examined the relationship between occupational functioning and patients with carefully diagnosed social phobia will be reviewed.

In one of the earliest investigations examining social phobia and occupational functioning, Turner, Beidel, and Larkin (1986) assessed with the impact of a DSM-III diagnosis of social phobia on various aspects of life functioning. Whereas 69.2 % of the sample felt that their social fears impacted their general social relationships, and 84.6 % reported impairment in academic functioning, the most widely endorsed area was occupational functioning where 92.3 % of the sample reported impairment. Types of functioning included the “inability to make informal suggestions in staff meetings and to make presentations before small or large groups; all resulting in lack of career advancement or being passed over for promotion” (Turner et al., 1986).

This early study set forth the notion that social phobia can be a severe disorder, impacting multiple areas of patients' lives. Although almost the entire sample endorsed occupational impairment, details such as frequency and specific levels of distress regarding this dysfunction were not assessed. More recent data also suggest that social fears affect attainment of employment and acceptance of job offers or job promotions (Stein et al., 2000). Stein and colleagues reported that socially phobic adults endorsed significantly higher educational impairment than persons without social phobia. About half of the social phobic sample reported that their disorder interfered "some" or "a lot" with their ability to obtain a job, with their education, and their personal life.

In addition to surveying work impairment among a group of patients with social phobia, other studies have examined impairment in those with this disorder in comparison to a normal control group. For example, Bruch, Fallon, and Heimberg (2003) reported that socially phobics with either the generalized or non-generalized subtype, were significantly impaired with regard to possible underemployment and perceived supervisor evaluation regarding work ability. In addition, among those with generalized social phobia, areas of impairment included perceived supervisor evaluation regarding career advancement and ability to conform to work role demands, anxiety when starting jobs, and among women in this sample avoidance of interpersonally oriented occupations. However, to date, there are no data on specific work behaviors and anxiety levels in particular interactions in the workplace.

Although the relationship between social phobia and occupational impairment is not 100% clear, the studies reviewed here offer a sound basis for further exploration. The evidence suggests that adults with high trait anxiety (see Appendix 1. Literature

Review), shyness, and social phobia report difficulty with occupational functioning when asked global questions about work experiences. To date, the overall severity of work impairment has been reported by this group. However, the details associated with this dysfunction are yet unknown. A fine grain analysis of work impairment is necessary to further understand the psychopathology of this disorder, specifically its impact on work functioning. Furthermore, the results of this study will assist in the further development of effective treatments for anxiety disorders, which should include interventions that address all aspects of an individual's functioning.

The purpose of this study was to compare work related impairment between patients with generalized social phobia and normal controls. In addition to work related quality of life subscales, a behavioral analysis of work behaviors and specific work-related anxiety was assessed via a 5-day prospective work diary. Finally, using a larger sample of patients with social phobia who participated in a treatment outcome study, within group demographic and clinical characteristics regarding working and non-working/did not meet work criteria participants were compared to examine possible factors related to rates of unemployment among the general sample.

Hypotheses

Job Characteristics:	Patients with social phobia will report poorer job characteristics than normal controls on a measure that taps the degree to which jobs are perceived as boring, co-workers are uncooperative, and policies are confusing.
Occupational Relations:	Patients with social phobia will report greater difficulty regarding relationships with co-workers and superiors.
Job Satisfiers:	Patients with social phobia will report less job satisfaction including poorer pay, little chance for involvement at work, and limited possibility for promotion. In addition, participants in the clinical sample will report less job satisfaction.
Frequency of Social Behaviors in the Workplace:	Patients with social phobia will report fewer interactions in situations with co-workers, superiors, and group meetings. In addition, socially phobic adults will refuse requests less often than normal controls.
Anxiety:	Patients with social phobia will report higher levels of social anxiety and greater anxiety interacting with co-workers, superiors, in group meetings, and while refusing requests from others.

Participants

The sample consisted of 19 patients with generalized social phobia and 27 normal controls. The groups were defined as follows:

Normal controls.

Normal controls did not meet diagnostic criteria for any DSM-IV Axis I or Axis II diagnoses. All normal controls were recruited through an ongoing NIMH funded assessment and treatment study being conducted at the Maryland Center for Anxiety Disorders (MCAD). At MCAD normal controls and patients were recruited via

newspaper ads, community flyers, and radio advertisements. Normal controls and patients were generally from areas of Maryland, Washington D.C., and Northern Virginia.

Social Phobia.

Patients with generalized social phobia were recruited from one of two sources: an ongoing NIMH treatment trial examining behavioral treatment for adults with social phobia being conducted at the National Institute of Mental Health. Twelve patients were recruited from this source. An additional seven patients were recruited were recruited through the University of California at San Diego Outpatient Services Clinic and the San Diego Veterans Affairs hospital. At these locations patient were recruited for the work assessment study via advertisements and referrals from psychologists and psychiatrists at the clinics. Patients were interviewed using the Anxiety Disorders Interview Schedule (ADIS-IV) (DiNardo, Brown, & Barlow, 1995). These 7 patients were compared to the 12 patients from MCAD on demographic and clinical variables. There were no significant differences between groups with regard to gender, ethnicity or severity of social phobia symptoms (see assessment section below). However, a 2 group univariate ANOVA revealed that patients from UCSD/SDVA were significantly older [$M=35.71$ (11)] than patients from MCAD [$M=24.67$ (5.25)] [$F(1,18) = 8.94, p = .008$].

Assessment Instruments

Anxiety Disorders Interview Schedule (ADIS-IV) (DiNardo, Brown, & Barlow, 1995).

The Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV) was used to diagnose social phobia and other Axis I disorders in the patient sample. The ADIS-IV is a semi-structured interview that assesses current episodes of anxiety disorders and other Axis I disorders, and allows for differential diagnosis among the anxiety disorders according to DSM-IV criteria. Reliability coefficients are not yet available for the ADIS-IV. However, using a very similar version of the ADIS (ADIS-R), kappa coefficients ranged from .57-.82; for social phobia the kappa coefficient was .79. In order to assess inter-rater reliability for the ADIS-IV, An advanced graduate student with multiple years experience independently re-diagnosed all 7 participants in the San Diego clinical sample using audiotapes of the original ADIS interviews and the Kappa statistic was used in order to obtain inter-rater reliability on a primary diagnosis of generalized social phobia. The Kappa statistic ($k = 1.0$, $p = .005$) revealed perfect agreement between primary and secondary raters for a primary diagnosis of social phobia. For the MCAD sample, final diagnoses were made by consensus with the study's principal investigators.

Composite International Diagnostic Interview (CIDI; World Health Organization, 1993). For the normal control sample, the Composite International Diagnostic Interview, Automated Version (CIDI; World Health Organization, 1993) was administered to determine the presence of Axis I disorders in the past 12 months. In this study, the computerized version of the CIDI was used. Its psychometric properties when administered by a clinician or lay person or when self-administered have been established (Andrews & Peters, 1998; Blanchard & Brown, 1998; Peters & Andrews, 1995; Wittchen, 1994). Validity studies have found adequate concordance rates between the CIDI and clinicians' checklists ($\kappa=.76$) and between the CIDI and independent clinicians' diagnoses (kappas ranging from .73-.83; Wittchen, 1994). Test-retest reliability kappas coefficients range from .5 to .8 for the various disorders, with an average test-retest kappa of .68 (Wittchen, 1994). Interrater reliability as assessed by kappa was greater than .9 for the majority of disorders and greater than .7 for all disorders (Wittchen, 1994). Studies of the automated version have shown acceptance of the computerized format by participants (Andrews & Peters, 1998; Peters, Clark, & Carroll, 1998).

Structured Clinical Interview for DSM-IV Axis II Disorders-Computer Assisted

Version (SCID-II-CAS; First, Gibbon, Spitzer, Williams, & Benjamin, 1997). For patients recruited at the UCSD VA, the clinician administered version of the SCID-II was used. At MCAD, patients and normal controls were administered the computerized version. As a safe guard, the clinician reviewed all positive responses (even yes responses on clusters of symptoms that do not meet diagnostic criteria in terms of frequency or severity are queried by the clinician in the presence of the patient). In addition, the computer program allowed clinicians to enter behavioral observation data observed during the interview. Thus, no diagnosis was made without the review and judgment of the clinician.

Although there are no reliability or validity data for the computerized version of the SCID-II, there are data on the standard version of the SCID-II. For example, in a Dutch sample of 70 outpatients, when one rater administered the SCID-II and another rater observed and rated during the interview, inter-rater reliability was good to excellent with Kappas ranging from .77 for obsessive-compulsive personality disorder to .82 for avoidant personality disorder (Arntz et al., 1992). Regarding test-retest reliability, one study found that of 18 patients with an average time of 1.7 days between interviews, the calculated Kappa was .74 for the presence of any personality disorder (O'Boyle & Self, 1990).

Social Phobia and Anxiety Inventory (SPAI) (Turner, Beidel, Dancu, & Stanley, 1989).

The Social Phobia and Anxiety Inventory (SPAI) is an empirically derived self-report inventory specifically developed to assess for social phobia and was used in this study as a self-report measure of social anxiety severity (Turner, Beidel, & Dancu, 1996). In addition, the measure assesses the somatic, cognitive, and behavioral aspects of social phobia across a wide range of social situations and settings. It is comprised of two subscales, one for social phobia and one for agoraphobia. The SPAI contains 45 items arranged in a Likert scale format to allow for assessment of symptom severity. Studies of the psychometric properties of the instrument found good test-retest reliability (kappa of .86) and a high degree of internal consistency (Chronbach's alpha of .96 for the social phobia subscale and .85 for the agoraphobia subscale).

Several studies using a variety of assessment strategies found that the SPAI can discriminate social phobics from normal controls and people with other anxiety disorders (Beidel, Turner, Stanley, & Dancu, 1989; Turner et al., 1989) and that it has moderate to high and significant correlations with other measures of social anxiety (Beidel, Turner, & Cooley, 1993; Davidson, et al. 1991; Herbert, Bellack, & Hope, 1991).

Quality of Life Questionnaire (QLQ) (Evans & Cope, 1989)

The QLQ assesses life quality across various domains. Internal consistency (Kuder-Richardson-20; KR-20) coefficients for the 3 job related domains that were the focus of this investigation were .96 for the Occupational Relations subscale, .90 for the Job Characteristics subscale, and .92 for the Job Satisfiers subscale. Additionally, a total

quality of life score was used for a within group comparison of working vs. non-working participants in the clinical and control groups. The content and psychometric properties for the three job-related scales are listed below:

QLQ Job Characteristics Subscale:

Low scores reflect the perception that a job is boring with uncooperative employees and confusing policies. Conversely, high scores indicate that jobs are interesting and challenging and that the work environment meets expectations. The test-retest coefficient was .86 (Evans & Cope, 1989) and the KR-20 estimate was .94.

QLQ Occupational Relations Subscale:

Low scores reflect trouble communicating with superiors and co-workers, feeling that a supervisor is aloof and an inefficient problem solver. High scores indicate good communication with superiors and co-workers and perceptions that supervisors have excellent interpersonal skills. Cross validation with a second sample revealed a KR-20 estimate of .97.

QLQ Job Satisfiers Subscale:

Those who score low report poor pay, little chance for involvement and that promotion is unlikely. On the other hand, high scores indicate good salaries, chances for promotion, and various non-monetary job reinforcers. The test-retest correlation was .80 (Evans & Cope, 1989). In addition, the KR-20 estimate among a cross validation sample was .93.

The Five-Item Facet-Free Job Satisfaction Scale (FFJSS; Quinn & Staines, 1979)

This measure assessed participants' general level of job satisfaction. Scores range between 5 and 16 with higher scores indicating higher job satisfaction. The measure correlates highly with other job satisfaction measures with an internal consistency coefficient of .77 (Quinn and Staines, 1979). An example of an item on the measure is "Knowing what you know now, if you had to decide all over again whether to take the job you now have, what would you decide?" (1= Decide definitely not to take the job; 2=Have some second thoughts; 3=Decide without hesitation to take the same job).

Daily Work Diary (DWD)

Developed specifically for this study, the DWD assesses demographic information such as age, gender, ethnicity, level of education, type of occupation, estimated yearly salary, as well as specific work behaviors. Diary methodology has been used to study a variety of psychological and medical phenomena. Some examples of areas that have been recently studied using diary methods are drug and alcohol abuse, marital processes, intimacy, medication adherence, and social interactions among selectively mute and socially anxious children (Garber et al., 2004; Heeb & Gmel, 2005; Laurenceau, et. al., 2005; Yeganeh et al., 2004). For a review of diary methodology see Bolger, Davis, and Rafaeli (2003).

For the purposes of this study, the Daily Work Diary was created to incorporate areas of functioning impairment that are in line with well used clinical research interviews such as the Anxiety Disorder Interview Schedule. For example, questions related to superiors, group interactions versus individual interactions, and request

refusal were adapted for work settings and built into the diary. In addition, items were generated per suggestions by anxiety experts during research meetings at MCAD. These suggestions along with the initial diary items created by Robin Yeganeh were incorporated into the final version of the diary. In addition, overall level of anxiety related to such tasks was rated on a 7-point Likert scale. Finally, avoidance of communication due to nervousness and overall discomfort regarding social situations was assessed. Participants were asked to monitor the frequency of specific work related behaviors including interactions with co-workers and superiors for 5 consecutive work days. Data with less than 3 completed entry points over the 5 day period of time were dropped in order to ensure that aggregated responses were representative of a 5 day work week. A copy of the Daily Work Diary is included in Appendix B.

Procedures

Clinical participants read and signed an informed consent prior to participation and all study questions were answered. Next, a trained clinician with at least 2 years experience with the ADIS administered the ADIS-IV clinical interview. Participants with a primary diagnosis of generalized social phobia, were invited to participate in the NIMH funded treatment trial. Those with generalized social phobia who also worked 20 hours a week, with at least five multiple coworkers, and at least one superior were included in this study. If the participant did not meet criteria for generalized social phobia, an appropriate treatment referral was made.

The Procedure for control participants was slightly different. After obtaining consent, normal controls completed the computerized version of the CIDI followed by a

review and inquiry on critical items (such as history of suicide) by a clinician at the Maryland Center for Anxiety Disorders (MCAD). If the results indicated that the participant met criteria for a psychiatric disorder, a treatment referral was made. If there was no indication of the presence of an Axis I disorder, the next phase of the assessment was completed.

At both sites the second assessment phase for all participants consisted of the administration of the SCID-II interview (either the computerized or the clinician-administered version) followed by administration of the QLQ, FJSS, and SPAI. Finally, the Daily Work Diary was given with the following instructions:

“The purpose of this diary is to understand social interactions that occur at work. Please complete the diary at the end of the work day. When we ask you about social interactions, we mean face to face conversations (simply greeting a person in the hallway and continuing to walk by is not considered an interaction for the purpose of this assessment).”

Diaries were completed over the first 5 consecutive work days from the time of the clinical assessment. Participants were given the option of turning in the completed diaries in person or by mail. Data were included if there were at least 3 out of 5 days of the work week completed.

Results

Demographics

The generalized social phobia group consisted of 13 men and 6 women with a mean age of 29. The normal control group was made up of 10 men and 17 women with a mean age of 44. No significant differences regarding ethnicity, marital status, or number of children were found. There was a statistically significant group difference for gender, with more females in the control group ($X^2 (n=46) = 4.4, p = .036$). In addition, a two group univariate ANOVA revealed that the normal control group was significantly older [$M = 44 (14.64)$] than the generalized social phobia group [$28.74 (9.33)$] [$F(1,44) = 16, p = .000$]. Thus, for all subsequent analyses, gender and age were included as covariates. For detailed demographic information see Table 1.

Major Occupational Groups (MOGs)

Major Occupational Groups issued by the U.S. Department of Labor/Bureau of Labor Statistics were used to examine group differences regarding work classifications (See Table 2). Chi Square tests on job categories revealed no significant group differences. The majority of participants (52.5% of patients and 44% of controls) had jobs in the category of Group D “Administrative Support Occupations, Including Clerical”.

Education

Educational achievement was categorized as High School, Partial College, Professional School, Bachelor's Degree, and Graduate School (See Table 3). There were significantly more socially phobic patients in the partial college category (X^2 (n=46) = 11.7, $p = .001$), a finding that remained significant when employed students were removed from the analyses. Moreover, significantly more normal controls attended graduate school (X^2 (n=46) = 5.2, $p = .023$), indicating significantly higher academic achievement for the normal control group.

Clinical Measures and Occupational Variables

The mean ADIS clinician-rated severity score for a diagnosis of social phobia was 6.26 (1.36) out of a maximum of 8 indicating moderate to severe clinical impairment. Severity of social phobia was confirmed by self report on the SPAI where the mean score was 110.6. In addition, 63% of the clinical sample met criteria for avoidant personality disorder. A two group univariate ANCOVA (covarying for age and gender) revealed that patients had significantly higher SPAI scores than normal controls [$F(1,42) = 146.81, p = .000$].

ANCOVAS also revealed that patients with social phobia had significantly poorer occupational relations (as measured by the QLQ Occupational Relations scale) [$F(1,42) = 8.3, p = .006$], indicating that they had more trouble communicating with co-workers and supervisors. There were no significant group differences on the FJSS measure of job satisfaction, QLQ Job Characteristics scale, QLQ Job Satisfiers scale, number of superiors, number of co-workers, number of work hours, or salary.

Daily Work Diary

Daily work diary data are presented in Table 6. Because the majority of study participants did not participate regularly in meetings or did not regularly refuse requests from supervisors or co-workers, these variables were dropped from the analyses. Furthermore, a preliminary examination of the distribution of the diary variables indicated that the data were not normally distributed (kurtosis >3), a necessary assumption for the use of MANCOVA. However, use of MANCOVA was necessary (rather than a non-parametric test), due to the need to control for groupwise error rate while also uncomplicatedly covarying for the demographic variables of age and gender. Therefore, for daily diary items for which kurtosis was greater than ± 3 , log transformed scores [$\log(\text{variable} + 1)$] were calculated (See Table 10). A score of one was added to each variable score to eliminate scores of zero from the analyses. All log transformations resulted in acceptable Kurtosis scores for coworker related items.

Following the transformation, a MANCOVA on items related to interactions and anxiety with coworkers was conducted. Included in the analysis were log corrected transformations for the items “Daily mean # of coworkers interacted with”, “Daily sum # of interactions with coworkers self initiated per week”, Weekly sum # of times wanted to communicate with coworker but could not because felt too nervous”, and one item that did not meet criteria for log correction, “Daily mean anxiety during interactions with coworkers”.

The results indicated an overall group difference for co-worker interactions [Wilks' Lambda $F(1,41) = 5.84, p = .001$] Follow-up with individual ANCOVAs indicated no significant differences between groups on the mean number of coworkers

with whom the subject interacted. However, those with social phobia initiated fewer social interactions than the normal controls [$F(1,41) = 10.07, p = .000$] and socially phobic patients endorsed a higher number of times that they wanted to communicate with coworkers but could not because they felt too nervous [$F(1,42) = 15.34, p = .000$]. In addition, when socially phobic patients did interact with coworkers, they reported higher levels of anxiety [$F(1,41) = 6.92, p = .012$]. Furthermore, socially phobic patients endorsed significantly higher overall anxiety in social situations at work than normal controls [$F(1,41) = 27.44, p = .000$]. The η^2 effect size for coworker related item MANCOVA was $\eta^2 = .039$, indicating that group membership was responsible for 39% of the total variability in daily diary coworker related item responses.

The result of a second MANCOVA (covarying for age and gender) on items related to interactions with superiors, including log corrected transformations on items “Daily sum # of interactions with superiors self initiated per week” and “Daily mean anxiety during interactions with superiors”, did not reveal an overall significant difference based on group. Thus, follow up tests on difference regarding number of superiors interacted with, number of self initiated interactions with superiors, anxiety during interactions with superiors, and number of times wanted to communicate with superiors but could not because they felt too nervous were not conducted.

In Study vs. Non-Study Social Phobia Patients

One of the difficulties in conducting this study was that there were few social phobic patients among the treatment seeking sample (25%) who worked 20 hours per week and had at least 5 co-workers. Further descriptive data regarding work status and student status were obtained from initial phone screens and treatment records at MCAD. Results revealed that of the additional 40 patients with generalized social phobia who took part in the larger assessment study, 4 (10%) did not complete the work diary while the remaining 36 (90%) were either unemployed or did not meet the study criteria of working at least 20 hours a week and/or working with 5 coworkers. Additionally, 3 of the members of this Unemployed/Did not meet criteria group were self-employed.

In order to explore factors that may explain low employment rates of social phobics who participated in this study, data on the 19 patients from the University of Maryland at College Park and the University of San Diego/San Diego Veterans Affairs hospital were compared against 36 patients with generalized social phobia from the University of Maryland at College Park who were either unemployed or did not meet criteria for the work study (See Table 7). Regarding marital status, results of a chi square analysis revealed that there were more married patients in the unemployed/did not meet criteria group ($\chi^2 (n=55) = 6.5, p = .011$). Chi Square tests did not detect significant group differences for gender, number of children, ethnicity or comorbid psychopathology. Additionally, there were no significant differences between groups regarding overall presence of any comorbid Axis I disorders or any differences in the presence of Axis II comorbidity. Results of a two group univariate ANOVA indicated that working socially phobic patients were significantly younger than those in the

unemployed/did not meet criteria sample [$F(1,53) = 6.06, p = .013$]. Thus, age was used as a covariate on clinical measures. Separate two group univariate ANCOVA tests covarying for age revealed that there were no differences between groups on clinical measures including the SPAI social phobia subscale score, ADIS social phobia severity score, or QLQ total quality of life score.

In Study vs. Non-Study Control Participants

With regard to control data, 27 working controls out of the total 181 controls, who took part in an assessment study at the University of Maryland at College Park, completed the daily work diary. Because patients only came in for one assessment visit, detailed data on reasons for absence of participation in the work study were not available. However, of the data that were obtained from initial phone screens it was found that 52 (34%) out of the 154 total were employed outside of the home while 13 (8%) were reportedly self employed. Finally, 90 (58%) of controls did not meet criteria for the study or were unemployed.

Discussion

This study compared adults with generalized social phobia to normal controls on quality of work life, work related social behaviors, and anxiety in the workplace. This is the first study to prospectively assess social behaviors and anxiety in work related social interactions using the behavioral assessment strategy of a daily work diary. A surprising discovery was the extremely high rate of patients that did not take part in the work study. Of the patients recruited for a larger treatment study at the University of Maryland, 35% were eligible for the work study while 65% of these patients were either unemployed or did not meet criteria for the study due to not working at least 20 work hours per week and/or having fewer than 5 coworkers. The results of a chi square test

indicated that there were significantly less patients in the work study who were currently married than in the sample of patients that did not take part in the work study. However, this may be related to the finding that members of the work study were also significantly younger than the other group.

The results of this investigation are consistent with other studies that have documented unemployment among patients with social phobia. For example, Wittchen and Beloch (1996) found that socially phobic patients had 3 times the rate of unemployment as non anxious patients with a history of herpetic infection. In addition, regarding variables related to unemployment, Kessler, Stein, and Berglund (1998) showed a correlation between low socioeconomic status (i.e., salary, education) and lifetime social phobia, suggesting a pattern of unemployment, or at least underemployment. Furthermore, the findings presented here are consistent with unemployment rates associated with shy adults (Caspi et. al., 1986) where 56% of shy women were likely to either have no work history or terminate employment after marriage or at childbirth with no later reentry into the workforce. While the percentage in this investigation was higher than that found by Caspi et al. (1986), it is important to note that shyness and social phobia are related, but not identical, conditions. Moreover, although most individuals with social phobia describe themselves as shy, a large percentage of those who endorse shyness do not meet criteria for social phobia. Thus, social phobia appears to be an extreme variant of shyness (See Heiser, Turner, & Beidel, 2002 for a discussion of this relationship) and it is logical that unemployment rates would be higher among those with social phobia, as opposed to shyness.

However, all of the data illustrate that social phobia results in occupational impairment in the form of higher rates of unemployment.

Within this sample, the only difference found between working and nonworking socially phobic patients was that those who were employed were younger than the unemployed group. Thus, it could be that with age comes an increase in avoidance behaviors, resulting in patients becoming less likely to pursue employment. However, there were no differences between groups regarding self or clinician rated severity of social anxiety, thus, when the criteria for social phobia are met, severity does not appear to influence whether or not a patient with the diagnosis is employed.

Of the control participants recruited for the larger assessment/treatment study at the University of Maryland very few took part in the work study. Exact reasons why only 27 of 52 controls who worked out of the home completed the diary are unknown. However, only 34% worked out of the home and some of those participants did not meet criteria for the study. Of those who did meet criteria but did not return the diary, one possible explanation is due to the fact that controls were only seen for one visit and were asked to mail the daily work diary back after they already received payment for participation. Again, because the low participation rate was not anticipated, reasons for non-participation were not recorded and cannot be discerned for certain. However, anecdotally, many control participants did not meet the criteria of working at least 20 work hours per week or having 5 coworkers.

Consistent with the literature on social phobia and educational impairment (Kessler et al., 1998; Stein & Kean, 2000; Turner et.al, 1986; Wittchen & Beloch, 1996), the socially phobic patients in this sample were more likely to have only partially

completed college. This finding remained significant even when working students were removed from both socially phobic and control participant groups. Furthermore, fewer patients had graduate school degrees than the normal control group. These data are consistent with findings of the original social phobia impairment study, in which Turner et. al. (1986) found that 84.6 % of socially phobic patients reported impairment in academic functioning. Furthermore, the data match those of Stein et al. (2000) who found that roughly half of socially phobic adults reported that their social phobia interfered "some" or "a lot" with their education, their ability to obtain a job, and their personal life and half reported that they dropped out of classes because of their social fears.

There are likely a number of factors influencing academic and occupational achievement, including fear/avoidance of performance tasks and fear embarrassment/negative evaluation while communicating with students and teachers. However, a surprising finding was that there were no differences regarding U.S. Department of Labor/Bureau of Labor Statistics Major Occupational Group (MOG) job categories. The most frequent single job category reported by response participants in the clinical and control groups was administrative support occupations

The data presented here support the hypothesis that patients with social phobia report greater difficulty regarding relationships with co-workers and superiors, as assessed by the QLQ Occupational Relations subscale. Low scorers on this scale have trouble communicating with coworkers and superiors and have complaints regarding their supervisors' communication style and problem solving abilities. Of course, if patients are significantly more anxious in social interactions, this might correlate with

greater relationship difficulty relative to coworkers and superiors. Additionally, relationship difficulty in the workplace may have other negative effects. For example, relationship difficulty with superiors might affect job promotion/salary, evaluations, and letters of recommendation. This finding also has implications for treatment development (discussed below).

Socially phobic patients initiated significantly fewer interactions with their work colleagues when compared to normal controls. Thus, their interactions in these work situations are consistent with their overall social interaction style (marked by avoidance). In addition, socially phobic patients reported that they were more likely to avoid communicating with coworkers because they felt too nervous. These are the first findings to document specific work related impairment associated with social phobia. In addition to their general heuristic value, these data have treatment implications, specifically the need to structure behavioral homework assignments aimed at increasing interactions with coworkers in the workplace as well as other social settings (i.e. work parties, group interviews). Additionally, participation in small group team building exercises at work might serve as regular exposure tasks and ultimately help reduce anxiety and avoidance while increasing socialization with both coworkers and superiors.

Another important result of this investigation was that patients were more anxious than controls during interactions with coworkers and at work in general. Heightened anxiety during interactions with coworkers is likely related to the finding of reduced patient interactions with coworkers. Even though initiating fewer interactions, socially phobic patients did not participate in interactions with significantly fewer

coworkers than normal controls. Thus, perhaps patients avoid social interactions when they can but when forced to engage in social encounters, they experience a higher degree of anxiety.

Moreover, it was found that patients reported a higher level of overall anxiety in social situations at work, which is in line with retrospective data reported by Bruch et. al. (2003). In that study, only patients with generalized social phobia reported higher anxiety than nonanxious controls based on retrospective report of anxiety when first starting a job. In the current investigation, although significantly higher than normal controls, socially anxious patients still only reported a mean overall anxiety score of 3 on a 1-7 scale, indicating only a moderate level of distress. Thus, even though these individuals were able to successfully maintain employment, they remained mildly to moderately anxious in the work setting. Prospective longitudinal vocational studies might help clarify the course of anxiety for socially anxious employees beginning and maintaining employment.

Not all hypotheses made in this study were supported. Both those with social phobia and normal controls scored in the average range on the QLQ Job Characteristics subscale, indicating that both groups perceived their jobs as equally interesting, their coworkers as cooperative and their job policies as clear. Furthermore, the hypothesis that socially phobic patients would report lower job satisfaction was unfounded. Patients and normal controls reported average levels of job satisfaction on the Job Satisfiers Quality of Life Questionnaire subscale. In addition, there were no differences between groups on a 5 item job satisfaction measure (FJSS). Patients scored in the 70th percentile in job satisfaction and controls fell in the 75th percentile. This lack of

difference between groups is consistent with the findings of Bruch, Fallon, and Heimberg (2003) who reported that socially phobic patients did not differ from normal controls on the FFJSS.

The most parsimonious explanation is that both patients and normal controls are content with the jobs that they have and that social anxiety does not interfere with general job satisfaction. Another possibility is that that low job satisfaction was not reported by clinical participants because they managed to secure jobs that allowed them to avoid social interactions with coworkers and superiors. However, additional studies would be needed to test these hypotheses.

Interestingly, few of the participants reported refusing unreasonable requests and few attended meetings on a regular basis. The most obvious explanation is that their job classifications (e.g., the majority worked in clerical-type positions) may not have allowed the opportunity to participate in many meetings. Moreover, given that there were no differences in job classification between groups, it may help to study specific work role characteristics in order to understand differences between the types of jobs held by socially anxious patients and normal controls. An example of such an inquiry would be assessing the degree to which workers feel that they are expected to interact with others as part of the job, regardless of job title or job class. Another question would be whether or not social avoidance affects specific demands of the job.

There was no overall group difference on items related to interactions with supervisors, so comparisons on specific items were not conducted. This finding was possibly due to the low number of interactions with superiors reported by each group (a weekly sum of 3.21 interactions with superiors among patients and 7.64 among normal

controls). In addition, unlike the many coworkers with whom participants could interact, on average members of each group had only 1 or 2 supervisors. It is possible that due to the sample size, this study lacked the power needed to detect significant between group differences if they were present. Thus, additional studies aimed at examining the relationship between social anxiety and work superiors are warranted. Solutions might include increasing the time span of diary data collection, thus allowing for the possibility of measuring more interactions with superiors, and obtaining a larger sample size.

In summary, these data represent the first attempt to conduct a fine grain analysis of specific work behaviors and anxiety related to specific social interactions in the workplace. Even with a relatively small sample, socially phobic patients were significantly less likely to initiate conversations and engage in interactions with coworkers. Likewise, they reported higher levels of anxiety than non-anxious controls during interactions. In fact, their anxiety prevented their ability to communicate with coworkers, despite a desire to do so. They also report greater hardship in relationships at work in comparison to normal controls. The findings presented here have implications for treatment development, job training development, and programs aimed at reducing the cost of anxiety in the workplace. Furthermore, settings such as employee assistance programs are ideal for involvement in the identification and treatment of work related anxiety and behavioral work interference related to work anxiety.

This study has several limitations. First, it is limited by the use of clinician and self-report data. In order to address the potential impact of monomethod bias, future

studies aimed at assessing work behaviors/anxiety by gathering data from alternative informants such as coworkers or superiors, although challenging, offer an alternative method of data acquisition. In addition, the sample size used in this study was limited because of the low rate of employment (as defined by this study) among socially phobic patients. Moreover, the two groups were not matched by age and thus age could have an effect on the outcome variables such as the DWD. Studies that examine work functioning among anxious patients at different adult developmental stages would clarify this potential interaction. Furthermore, because an additional clinical comparison group was not examined, it is not known as to whether or not these findings are specific to patients with social phobia. Thus, future studies aimed at examining specific work related strengths and deficits among patients diagnosed with other Axis I and II psychiatric disorders are warranted. Another consideration in this study is the high rate of comorbidity with avoidant personality disorder. For example, Van Velzen et al. (2000) found that those with generalized social phobia and avoidant personality disorder were more impaired in occupational functioning than those with generalized social phobia alone. Due to the low employment rate found among workers with social phobia, alternative assessment strategies might further identify useful information for both work related and general treatment development. Socially phobic patients report functional impairment in multiple daily activities (i.e., work, school, household chores, volunteering, personal care and getting around the neighborhood (Stein & Kean, 2000; Turner et al., 1986). As such, studies aimed at evaluating specific types of behavioral interference and avoidance in areas where data are more plentiful might further

contribute to our understanding of social anxiety and its relationship to work impairment.

Table 1***Demographic Characteristics of Study Participants***

	<u>SP</u>	<u>Control</u>	<u>Total</u>
Total N	19	27	46
Male	13	10	23
Female	6	17	23
Age (Mean, SD)	28.74 (9.33)	44 (14.64)	

- Significant gender difference $X^2 (1, N = 46), = 4.4 p = .036$
- Significant age difference $F(1,44) = 16, p = .000$
- ADIS Social Phobia Severity 6.26 (1.36)

Ethnicity

Caucasian	9 (47%)	18 (67%)	27 (59%)
African-American	5 (26%)	7 (26%)	12 (26%)
Latino/Latina	1 (5%)	1 (4%)	2 (4%)
Middle Eastern	1 (5%)	0 (0%)	1 (2%)
Asian	0 (0%)	1 (4%)	1 (2%)
Pacific Islander	1 (5%)	0 (0%)	1 (2%)
Indian Subcontinent	1 (5%)	0 (0%)	1 (2%)
Biracial	1 (5%)	0 (0%)	1 (2%)
<i>Any Minority</i>	10 (53%)	9 (33%)	19 (41%)

Marital Status

Single	15 (80%)	15 (56%)
Married	2 (10%)	9 (33%)
Divorced	2 (10%)	3 (11%)
Widowed	0	0

Number of Children

0	15 (79%)	17 (63%)
1	1 (5%)	5 (19%)
2	2 (11%)	3 (11%)
3	1 (5%)	2 (7%)

Table 2

<http://www.bls.gov/ncs/ocs/ocsm/commain.htm>

*U.S. Department of Labor
Bureau of Labor Statistics*

Major Occupational Groups (MOGs)

MOG A Professional, Technical and Related Occupations

MOG B Executive, Administrative, and Managerial Occupations

MOG C Sales Occupations

MOG D Administrative Support Occupations, Including Clerical

MOG E Precision Production, Craft, and Repair Occupations

MOG F Machine Operators, Assemblers, and Inspectors

MOG G Transportation and Material Moving Occupations

MOG H Handlers, Equipment Cleaners, Helpers, and Laborers

MOG K Service Occupations, Except Private Household

	<u>SP</u>	<u>Control</u>
MOG A	2 (%10.5)	3 (%11)
MOG B	3 (%15.8)	8 (%30)
MOG C	1 (%5.3)	3 (%11)
MOG D	10 (%52.6)	12 (%44)
MOG G	1 (%5.3)	0 (%0)
MOG H	0 (0%)	1 (4%)
MOG K	1 (%5.3)	0 (%0)

One patient did not give job description

Table 3

Education

	<u>SP</u>	<u>Control</u>
High School	1 (%5)	1 (%4)
Partial College ₁	13 (%68)	5 (%19)
Professional School	0 (%0)	3 (%11)
B.A.	4 (%21)	9 (%33)
Graduate School ₂	1 (%5)	9 (%33)

₁ significant difference $X^2 (1, N = 46), =.11.7 p = .001$

₂ significant difference $X^2 (1, N = 46), =.5.2 p = .023$

Table 4***Comorbid diagnoses in patients with social phobia***

	SP	Controls
Specific Phobia	1 (5%)	0
GAD	1 (5%)	0
OCD	1 (5%)	0
MDD	4 (21%)	0
Dysthymic Disorder	1 (5%)	0
Depressive Disorder NOS	1 (5%)	0
ETOH Abuse	1 (5%)	0
Avoidant PD	12 (63%)	0
Paranoid PD	1 (5%)	0
OCPD	1 (5%)	0

Table 5

Results of ANCOVA's controlling for age and gender:

Means and standard deviations for social phobic and normal control groups on clinical measures and work demographics

Variable	Social Phobia	Control	p
	<u>M</u> (SD)	<u>M</u> (SD)	
SPAI	110.6 (24.5)	24.7 (18.3)	.000
FFJSS (job satisfaction)	11.22 (2.24)	11.96 (2.71)	NS
QLQ Job Characteristics	42.42 (9.5)	51 (9.42)	NS
QLQ Occupational Relations	42.73 (10.6)	54 (8.34)	.006
QLQ Job Satisfiers	43.8 (10.4)	48.9 (9.55)	NS
# of Superiors	2.3 (2)	1.7 (.87)	NS
# of Work hours	33.1 (12.22)	33.4 (11.54)	NS
# of Co-workers	11.7 (13.1)	36.8 (95)	NS
Salary ₁	26,814 (18,022)	38,392 (31,565)	NS

₁ SP=19, Control=25

Table 6

Results of ANCOVA's controlling for age and gender:

Means and standard deviations for social phobic and normal control groups

on Daily Work Diary items

Variable	Social Phobia	Control	p
	<u>M</u> (SD)	<u>M</u> (SD)	
Daily mean # of coworkers interacted with			
	3.74 (3.1)	6.81 (5.73)	.025
Daily sum # of interactions with coworkers self initiated per week ₂			
	10.74 (11.8)	22.85 (17.28)	.009
Daily mean anxiety during interactions with coworkers ₂			
	2.32 (1.42)	1.37(.64)	.012
Daily mean # of superiors interacted with			
	1.23 (1.18)	1.26 (.84)	NS
Daily sum # of interactions with superiors self initiated per week			
	3.21 (3.24)	7.64 (10.48)	NS
Daily mean anxiety during interactions with superiors ₃			
	2.84 (1.5)	1.68 (.86)	NS
Weekly sum # of times wanted to communicate with coworker but could not because			
felt too nervous	3.52 (5.2)	.11 (.42)	.001

Weekly sum # of times wanted to communicate with superior but could not because felt

too nervous 2.16 (2.7) .26 (.86) .004

Daily mean overall anxiety in social situations at work ₄

3.08 (1.52) 1.32 (.55) .000

Some subjects had missing data, therefore group n's are variable

1 SP=19, Control=25

2 SP=19, Control=26

3 SP=13, Control=23

4 SP=18, Control=27

Table 7

Demographic Characteristics of In Study vs. Non-Study Social Phobia Patient's

	<u>Working</u>	<u>Unemployed/Did not meet criteria</u>	<u>Total</u>
Total N	19	36	55
Male	13	18	31
Female	6	18	24
Age (Mean, SD)	28.68 (9.34)	36.75 (11.86)	

- Significant age difference $F(1,53) = 6.06, p = .013$

Employment status

	<u>In Study</u>	<u>Non -Study</u>
Employed/Met Criteria	19 (100%)	0 (0%)
Incomplete Data		4 (10%)
Unemployed/Did not meet study criteria		36 (90%)

Ethnicity

	<u>Working</u>	<u>Unemployed/Did not meet criteria</u>
Caucasian	9 (47%)	22 (61%)
African-American	5 (26%)	6 (17%)
Latino/Latina	1 (5%)	2 (6%)
Middle Eastern	1 (5%)	0 (0%)
Asian	0 (0%)	3 (8%)
Pacific Islander	1 (5%)	1 (3%)
Indian Subcontinent	1 (5%)	1 (3%)
Biracial	1 (5%)	1 (3%)
Any Minority	10 (53%)	14 (39%)

Marital Status

Single	15 (80%)	18 (50%)
Married	2 (10%)	16 (44%)
Divorced	2 (10%)	1 (3%)
Widowed	0	1 (3%)

Number of Children

0	15 (79%)	21 (58%)
1	1 (5%)	4 (11%)
2	2 (11%)	6 (17%)
3	1 (5%)	3 (8%)
4	0	1 (3%)
5	0	1 (3%)

Table 8

Comorbid diagnoses of Working vs. Unemployed/Did not meet criteria social phobia patient's

	<u>Working</u>	<u>Unemployed/Did not meet criteria</u>
Specific Phobia	1 (5%)	2 (5.5%)
GAD	1 (5%)	2 (5.5%)
OCD	1 (5%)	2 (5.5%)
MDD	4 (21%)	2 (5.5%)
Dysthymic Disorder	1 (5%)	2 (5.5%)
Depressive Disorder NOS	1 (5%)	1 (3%)
ETOH Abuse	1 (5%)	1 (3%)
ETOH Dependence	0	2 (5.5%)
Cocaine Dependence	0	1 (3%)
Cannabis Dependence	0	2 (5.5%)

Avoidant PD	12 (63%)	10 (28%)
Paranoid PD	1 (5%)	0
OCPD	1 (5%)	3 (8%)
Personality Disorder NOS	0	1 (3%)

The multiple substance abuse/dependence diagnoses in the non-working group belong to 4 patients in that group.

Table 9

Results of ANCOVA's controlling for age

Means and Standard Deviations of working vs. non-working social phobia patient's on Measures

Variable	Working	<u>Unemployed/Did not meet criteria</u>	p
	<u>M</u> (SD)	<u>M</u> (SD)	
SPAI	110.6 (24.5)	105 (20.9)	NS
ADIS SP Severity	6.26 (1.34)	6.38 (.8)	NS
QLQ Total t-score	38.95 (7.2)	41.58 (10.13)	NS

Table 10

<u>Kurtosis based off of log corrected distributions:</u>	Kurtosis
Daily mean # of coworkers interacted with	-.039 (.688)
Daily sum # of interactions with coworkers self initiated per week	-.160 (.695)
Weekly sum # of times wanted to communicate with coworker but could not because felts too nervous	3.00 (.688)
Daily sum # of interactions with superiors self initiated per week	.648 (.702)
Daily mean anxiety during interactions with superiors	-.769 (.768)
Weekly sum # of times wanted to communicate with coworker but could not because felts too nervous	2.96 (.688)
<u>Variables with acceptable Kurtosis that were not transformed:</u>	Kurtosis
Daily mean anxiety during interactions with coworkers	2.18 (.695)
Daily mean # of superiors interacted with	2.88 (.688)
Daily mean overall anxiety in social situations at work	1.06 (.695)

Appendix A

LITERATURE REVIEW

Social Phobia

According to the Diagnostic and Statistical Manual for Mental Disorders 4th edition (DSM IV; APA, 1994), social phobia is a fear of being exposed to scrutiny or negative evaluation in social or performance situations. Moreover, according to the DSM-IV:

“the essential feature of Social Phobia is a marked and persistent fear of social or performance situations in which embarrassment may occur (Criterion A); exposure to the social or performance situation almost invariably provokes an immediate anxiety response (Criterion B); this response may take the form of a situationally bound or situationally predisposed Panic Attack; although adolescents and adults with this disorder recognize that their fear is excessive or unreasonable (Criterion C), most often, the social or performance situation is avoided, although it is sometimes endured with dread (Criterion D)” (APA, 1994). Thus, although socially phobic patients realize that some of their fear is irrational, avoidance of anxiety evoking situations is a hallmark of the disorder.

Additionally, according to the DSM-IV (APA, 1994), in order for an anxiety disorder (i.e. social phobia) to be appropriately diagnosed, there must be evidence of avoidance, anxious anticipation or distress in the patient’s normal routine, or dysfunction in either interpersonal, academic, or *occupational* areas of functioning. Occupational problems also fall under Axis IV (Psychosocial and Environmental Problems) of the DSM-IV. Examples of such problems are threat of job loss, stressful work schedules, difficult work conditions, job dissatisfaction, job change and discord with boss or co-workers (APA, 1994).

Table 1**Diagnostic Criteria for Social Phobia**

A.	A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing. <i>Note:</i> In children, there must be evidence of the capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults.
B.	Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack. <i>Note:</i> In children, the anxiety may be expressed by crying tantrums, freezing, or shrinking from social situations with unfamiliar people.
C.	The person recognizes that the fear is excessive or unreasonable. <i>Note:</i> In children, this feature may be absent.
D.	The feared social or performance situations are avoided or else are endured with intense anxiety or distress.
E.	The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.
F.	In individuals under age 18 years, the duration is at least 6 months.
G.	The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g., Panic Disorder With or Without Agoraphobia, Separation Anxiety Disorder, Body Dysmorphic Disorder, a Pervasive Developmental Disorder, or Schizoid Personality Disorder).
H.	If a general medical condition or another mental disorder is present, the fear in Criterion A is unrelated to it, e.g., the fear is not of stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in Anorexia Nervosa or Bulimia Nervosa.
<i>Specify if:</i>	Generalized: if the fears include most social situations (also consider the additional diagnosis of Avoidant Personality Disorder).

Source: American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC: American Psychiatric Association, 416-417.

Adults with social phobia report fear in a variety of situations (Holt, Heimberg, & Hope, 1992) including formal speaking, attending a social event, maintaining a conversation, performing in front of others, and eating or writing in front of others (Turner, Beidel, Dancu, & Keys, 1986). Within the disorder, two subtypes are currently recognized: a generalized subtype and a specific subtype. Those with the generalized subtype experience distress across a broad range of social and performance situations and those with the specific (circumscribed) subtype experience distress in only one or two social situations. For example, those with the specific subtype may only fear and experience distress when engaged in public speaking. Moreover, studies have found that the generalized subtype is the more severe and more common type (Holt et al., 1992; Kessler, Stein, & Berglund, 1998; Turner, Beidel, & Townsley, 1992).

In addition, some prevalence rates suggest that social phobia is the most common anxiety disorder in the general population. Beidel and Turner (1998) found that the prevalence of social phobia among adults ranges from 2 to 8 percent, depending on the assessment methodology and sample used. Furthermore, in a review of the literature on childhood and adolescent social phobia, Beidel, Ferrell, Alfano, and Yeganeh (2001) reported that the mean age of onset occurred around mid-adolescence, although it can occur at the age of 8 and perhaps even younger.

Social phobia has a high rate of co-occurrence with other Axis I disorders (Beidel & Turner, 1998). In one study, 58% of socially phobic participants met criteria for another disorder; most often simple phobia, dysthymic disorder, or panic disorder with agoraphobia (Sanderson, Rapee, & Barlow, 1987). Moreover, Turner, Beidel, Borden et al. (1991) found that among 71 socially phobic patients, 33% of the sample

met criteria for generalized anxiety disorder. Other commonly co-occurring disorders included simple phobia (11%), dysthymic disorder (6%), panic disorder (3%), major depressive disorder (3%), and obsessive-compulsive disorder (1%).

Social Functioning

Impairment in academic and social functioning among socially phobic patients has been the subject of empirical study and thus, more is known in this area than about impairment in occupational functioning. For example, Turner (1991) reported that some social phobics received low grades in school because they could not participate in class discussions to demonstrate their knowledge of the material. Furthermore, others made educational decisions such as which classes to take and whether to go to graduate school based on their social fears. Consistent with these findings, Stein et al. (2000) found that socially phobic adults reported significantly higher educational impairment than persons without social phobia. About half reported that their social phobia interfered "some" or "a lot" with their education, their ability to obtain a job, and their personal life. Almost half reported that they dropped out of classes because of their social fears. Stein and Kean (2000) used the Ontario Mental Health Survey and found the same results. Persons with social phobia reported functional impairment in multiple domains including their main activities (i.e., work, school, household chores, or volunteering) and other daily activities (e.g., personal care and getting around the neighborhood). The level of impairment was similar to that reported by persons with depression.

In addition, Wittchen and Beloch (1996) also documented the existence of social impairment in patients with social phobia. Using the Liebowitz Self-Rated Disability

Scale, social phobics were significantly more impaired than nonanxious controls. Socially phobic patients reported the highest degree of impairment with romantic relationships, education and careers, mood, performing household work and relationships with family and friends. In addition, difficulty in these areas often leads to avoidance of social behaviors. For example, Turner, Beidel, and Larkin (1986) found that 85 percent of their sample of socially phobic adults reported some form of social avoidance.

Another area of social impairment that has been studied among socially phobic adults is social skill deficits. If socially phobic adults avoid social interactions with others, it would be reasonable to expect that they might have fewer skills than non-anxious adults. Rapee and Lim (1992) compared the social skills of persons with social phobia and normal controls during a brief speech. Results revealed that observers' ratings of social skills of those with social phobia were not significantly worse than the ratings for normal controls using either global or specific measures. However, social phobics' self-ratings of skill were significantly lower than judges' ratings of their performance and significantly lower than the self-ratings of normal controls. On the other hand, not all observers rate socially phobic participants as equally skilled to normal controls. For example, Alden and Wallace (1995) compared the social skills of persons with social phobia to normal controls during an unstructured conversation task. Those with social phobia were judged to show less verbal behavior and more anxiety, to convey less warmth, and to be rated as less likeable than controls. And again, social phobics' ratings of their own performance were significantly worse than the experimenters' ratings. These findings are in line with those of Hofmann, Gerlach,

Wender, and Roth (1997) who found that compared to normal controls, persons with social phobia showed longer and more frequent pauses during a speech task but did not differ on several measures of facial gaze. Although the findings are not always consistent, social skills deficits, and thus social impairment have been documented among socially phobic adults; especially when taking self ratings into account.

Yet another area of functional impairment that is frequently a problem among this population is substance abuse. There are high rates of substance use among socially phobic adults. Specifically, there is a high rate of comorbidity between alcohol use and social phobia. For example, university students diagnosed with social phobia were 1.7 times as likely also to be diagnosed with an alcohol use disorder compared to those who were not assigned the diagnosis (43% vs. 26%; Kushner and Sher, 1993) . Furthermore, about 22% of those with social phobia in the ECA community survey also met criteria for an alcohol use disorder (Himle & Hill, 1991), a figure more than 1.5 times greater than the base-rate of 13.8% for alcohol disorders in the ECA. Therefore, in addition to typical avoidance of anxiety provoking situations, alcohol use may be used to reduce anxiety in fearful situations.

The evidence for impairment in social and academic functioning among socially phobic adults is well documented. However, less is known about social phobia and its impact upon occupational functioning. Below, the extant literature is reviewed.

Overview of Anxiety and Work Impairment

Anxiety disorders are among the most common psychiatric disorders in the general population. Often considered as “not severe”, the annual cost of these disorders to the general public in 1990 was approximately 42.3 billion dollars (\$1542 per sufferer; Greenberg et al., 1999). Anxiety disorders accounted for 10% of indirect job costs and of this cost 88% was due to lost productivity while at work. Additionally, with the exception of simple phobia, all of the anxiety disorders were associated with workplace impairment although details were not reported. Nevertheless, attention to occupational impairments caused by social anxiety has been limited. However, there are some data regarding occupational functioning and related constructs such as stress and trait anxiety that may illuminate potential avenues for investigation into social phobia.

Research on stress and anxiety has crossed numerous disciplines such as psychology, medicine, and sociology (Baba, Jamal, & Tourigny, 1998). Anxiety has been conceptualized in numerous ways depending on the theoretical position of the researcher (e.g., cognitive inventories, behavioral assessments, and state and trait inventories). Yet, the most frequent measures of anxiety used within research in occupational settings have been dimensional inventories (Baba et al., 1998), such as the Spielburger State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Baggett, & Jacobs, 1983).

Prior to reviewing these data, it is important to note that within this area of research, there are many inconsistencies regarding methods of measuring job related anxiety, stress, and psychological strain. For example, Kahn and Byosiene (1992) found many variations when defining the construct of psychological strain including:

health and physical problems (used in 16.3% of studies), anxiety/tension (15.4%), physical, psychological or emotional strain (10%), and depression (8.1%). Briefly, despite the various terms, there is evidence to support a relationship between anxiety and occupational distress. Hutri and Lindeman, (2002) found that occupational crises were related to trait anxiety. Similarly, Spector (2002) reported that perceptions of control in the workplace were related to anxiety. However, there is still a need for research on the impact of various anxiety disorders (e.g. social anxiety, general anxiety) on occupational functioning. This research would have implications for the further conceptualization and treatment of anxiety disorders.

Given the current dearth of data in the clinical literature and the need for further investigation on the aforementioned topic, this literature review will begin by summarizing research pertaining to the relationship between occupational functioning and dimensional measures of anxiety. Next, a review of studies pertaining to the interaction between shyness (a construct separate but possibly related to social phobia) and what is known regarding occupational functioning will be incorporated. Finally, the limited research on occupational functioning and social phobia will be reviewed.

Anxiety as a Dimensional Construct

This review of the data on occupational functioning and anxiety as a dimensional construct is warranted because as noted above, most studies of anxiety and occupational functioning are based on dimensional self-report measures, such as the STAI (Spielberger, et al., 1983). Although trait anxiety is different from social phobia, many with social anxiety (particularly the generalized subtype) report elevated trait anxiety. Thus, these data may be useful as a background for understanding the relationship between social phobia and occupational impairment.

Trait Anxiety and Occupational Functioning

The majority of studies examining anxiety and occupational functioning have used self-report anxiety measures. Although most have considerable methodological limitations, they offer researchers interested in clinical anxiety disorders an initial framework for the relationship between anxiety and occupational impairment.

One method by which anxiety may be related to occupational well being and job stress is through perceived job satisfaction. For example, in a study of 2,900 Finnish employees working at 152 hospital wards, Elovainio, Kivimaki, Steen and Kalliomaki-Levanto (2000) used self-report measures to evaluate the relationship between job control, hostility, trait anxiety, and job satisfaction. Of the sample, 56.3% were registered nurses, 20.3% were practical nurses, 8% were ward sisters, 7.9% were nonspecified clerical workers, 1.2% were psychologists, and the sample was comprised of mostly women (92.8%). Anxiety was measured via a shortened six-item Trait-Anxiety scale based on the Spielberger anxiety measure. In addition, measures of occupational functioning included a self-report measure of job control consisting of a

nine-item job decision latitude scale derived from the Job Content Questionnaire (Karasek, 1979) and composed of the two main aspects of job control: skill discretion and decision authority. Also, mental health was assessed with the 12-item GHQ and job satisfaction was measured using a 14-item job satisfaction scale from the Job Diagnostic Survey (Hackman & Oldham, 1975). Finally hostility was assessed using the Finnish Twin Study Scale of Hostility (a measure that consists of questions about irritability and anger responses).

Results of a multilevel regression analysis revealed that higher trait anxiety was related to lower job satisfaction as measured by the Job Diagnostic Survey. However, when job control was factored into the equation, this reduced the coefficient of trait anxiety (from -.499 to -.318). Thus, the authors concluded that, “anxious individuals who have not been promoted to jobs with higher level of control may be more dissatisfied than less anxious individuals working in the same unit” (Elovainio, 2000). This study should be interpreted with caution however because of several methodological confounds. For one, the sample size was so large that all correlations above .11 were significant at $p < .001$. Thus, the small but significant correlations interpreted in the results of this study may be restricted by elevated Type II error rates. Furthermore, trait anxiety was measured via a brief 6-item questionnaire that, although reportedly showed good validity and reliability, may not be as sensitive as the originally validated measure of anxiety. Despite these limitations, this study documents the relationship between anxiety and general health and job control, a factor that is a strong component of occupational experience. In addition, this finding is consistent with Spector (2002) who reviewed conditions of the workplace that affected negative

emotional reactions such as anxiety. Spector concluded that perceptions of control interact with factors such as anxiety, physical health problems, and counterproductive behavior at work.

In yet another examination of the relationship between anxiety and occupational functioning, Hutri and Lindeman (2002) assessed the relationship between stress, negative emotion, and occupational crisis. In this study, 277 employees (53% female) from various occupations completed the Occupational Crisis Scale (a stress questionnaire), the Anger Expression Scale, and the STAI. The results indicated that occupational crisis was related to work overload, more family worries, increased interpersonal problems, frustration at work, organization change, and threat of job loss (Hutri & Lindeman, 2002). Furthermore, women more often experienced occupational crises. In addition, crises were related to trait anxiety, suppressed anger and depressive symptoms but not to overtly expressed anger or state anxiety. Thus, trait anxiety, which is perceived as a precursor to work stress rather than being affected by work stress (i.e., state anxiety; Baba, Jamal, & Tourigny, 1998), bore the stronger relationship to occupational crisis.

The preceding section documented the relationship between self reported anxiety and job control, job satisfaction, and occupational crisis. In each instance, higher trait anxiety is related to more severe occupational impairment. The evidence is largely based on self-report measures, and virtually all studies used the STAI as a measure of trait anxiety. Thus, the literature in this area reflects the relationship between occupational functioning and trait anxiety as it is operational defined according to the STAI. The question remains whether these findings would be consistent if social

anxiety, rather than trait anxiety served as the dependent variable. Furthermore, in some instances the measures of anxiety are so brief (e.g., 6-item trait questionnaire; Elovainio et al., 2000) that the validity of the construct is questionable. Finally, the studies presented here are mostly correlational and group differences based on anxiety disorder diagnoses have yet to be examined.

Additionally, it is unclear whether there are buffers that serve to protect against work strain and anxiety. For example, there is some evidence that positive factors such as social support may serve to buffer the effects of work stress (Dobрева-Martinova, 2002). Although this is not always found to have a significant effect (Ganster, Fusilier, & Mayes, 1986), it may be of particular relevance for the study of social phobia, given that most individuals with social phobia have a severely restricted social network. Relatedly, there are research data examining occupational impairment and shyness. Due to the overlap between shyness and social phobia, studies of occupational impairment among shy persons may help to illustrate the relationship between impairment in occupational functioning and social phobia. This literature is discussed below.

Shyness

Due to the lack of standardized criteria, there is no single accepted definition of shyness. Rather, different researchers have developed their own idiosyncratic definitions (Turner, Beidel, & Townsley, 1990). Beidel and Turner (1999) reviewed the course of shyness citing that both professionals and lay persons use the term to describe those who are “reticent to engage in social interactions or who are socially withdrawn” (p.204). Similarly, Pilkonis (1977a) defined shyness as “a tendency to avoid social

interaction and to fail to participate appropriately in social situations” (p.585).

Moreover, others have suggested that shyness is due to anxiety and discomfort, which in turn results in silence, withdrawal, and lack of overt behavior (Cozier, 1979). Cozier describes those who are shy as being self-conscious, unhappy, and preoccupied with the self and the impression being made. Henderson and Zimbardo (1998) offered a more recent definition by defining shyness as:

“...discomfort and/or inhibition in interpersonal situations that interferes with pursuing one's interpersonal or professional goals. It is a form of excessive self-focus, a preoccupation with one's thoughts, feelings and physical reactions. It may vary from mild social awkwardness to totally inhibiting social phobia.” (p. 497).

Thus, most definitions appear to share the themes of fear and social inhibition due to excessive focus on the self. This social inhibition may lead to impairment in a number of areas of life functioning. What is striking is the similarity between these definitions of shyness and the DSM-IV (APA, 1994) definition of social phobia (see below). Yet, the relationship between shyness and social phobia is unclear and thus, numerous theories have been proposed. For example, social phobia may be a severe form of shyness, a different condition from shyness, or these could be overlapping conditions. One thing that is known is that shyness is more prevalent than social phobia with prevalence rates ranging between 20 and 48% of the population (Heiser, Turner, & Beidel, 2003) vs. social phobia for which prevalence rates in the general public are roughly 8% (Beidel & Turner, 1998).

Despite the various theories that have been proposed, the relationship between shyness and social phobia was only recently empirically examined. In the first direct comparison of rates of social phobia among shy and non-shy college students (mean age

19.5 yrs), Heiser, Turner, and Beidel (2003) reported that the prevalence of social phobia was significantly higher among shy persons (18%) than non-shy persons (3%), although the majority of shy individuals (82%) were not socially phobic. Shy participants with social phobia were shyer, more introverted, and more neurotic than other shy people, but none of these factors significantly differentiated shy persons with social phobia from those without social phobia. These researchers concluded that social phobia is not merely severe shyness although the two conditions are related. In addition, it was concluded that shyness is a much broader construct than social phobia. Clearly, given the similarity in descriptive definitions and the overlap between the conditions, understanding the literature on shyness and both social and occupational functioning may benefit those who are interested in occupational impairment among socially phobic adults.

Shyness and Occupational Functioning

Several studies have documented a relationship between shyness and occupational impairment. Caspi et al. (1988) examined the age by which shy and non-shy participants in the United States first entered stable careers in which they held a functionally related job for at least 6 years. Three measures of occupational achievement and stability were used. The first rating of occupational status at midlife, was rated on a 7 point scale ranging from 1 (*unskilled employee*) to 7 (*higher executive*). Next a measure of occupational achievement, judged by level of occupational status given participants' education levels, adolescent IQs, senior-high school GPAs and a measure of career aspiration. Finally, occupational stability was calculated using data

regarding the number of jobs held, work history, and unemployment history of each participant. Results revealed that history of childhood shyness had a negative effect on occupational achievement and occupational stability. Among males, childhood shyness predicted delayed entry into a stable career, which predicted lower occupational achievement and occupational stability. With regard to occupational impairment among women with a history of childhood shyness, Caspi et al. (1988) reported that 56% of women versus 36% of normal controls were more likely either to have no work history or to terminate employment at marriage or childbirth with no later reentry into the labor force. These differences were not found for men. In a similar research design, Kerr et al. (1996) reported childhood history of shyness did not impact occupational functioning in a sample of Swedish adults. Given the differences in the impact of shyness on occupational outcomes between U.S. and Swedish study participants, it may be that shyness is of greater concern in the U.S. Additional studies examining these cultural differences are warranted.

Other forms of impairment related to occupational functioning have been reported among shy American adults. For example, Phillips and Bruch (1988) reported that:

“Because shyness involves discomfort in the presence of other people due to anticipated or real negative social feedback, it is reasonable to expect that shy persons may avoid exposure to interpersonally oriented career fields and be more likely to acquire non-interpersonally oriented career preferences that involve data-related or technical types of work activities” (p.159). To test this theory, Phillips and Bruch (1988) examined 81 women and 70 men (N = 151) from multiple sections of an

undergraduate course in career planning. Participants were a mean age of 19.9 years and all participants completed the 13-item Revised Cheek and Buss Shyness Scale (RCBSHY; Cheek, 1983) to assess shyness. In addition, orientation of expressed career interests was assessed by a single questionnaire item that asked participants to list "all the occupations you are seriously considering right now". Three responses were coded for degree of interpersonal orientation using the *Dictionary of Holland occupational codes* (Gottfredson, Holland, & Ogawa's, 1982). Furthermore, career information seeking behavior, career decidedness, and job interview expectations were assessed.

Results revealed that shy participants produced fewer interpersonally oriented occupations when asked to list specific occupations in which they were interested. Furthermore, shy participants were significantly less likely to seek career information and were significantly more undecided about their career choice. Moreover, both shy men and women expected assertive behaviors to be less helpful in creating a favorable impression and expected that they would be less likely to engage in self-expressive behaviors when interviewing than members of the non-shy group. One might speculate that this latter finding may be indicative of social skills deficits such as those found in adults with generalized social phobia and avoidant personality disorder (Beidel & Turner, 1998). This study suggests that shy adults are less likely to choose interpersonally oriented career paths and interpersonal skills deficits among this sample are also expressed in their beliefs about their own job interviewing behaviors. In the next section, data documenting that shyness is related to inhibition of career development are reviewed.

Hamer and Bruch (1997) hypothesized that shyness is related to delayed development of resources for dealing with career tasks during college. Students enrolled in introductory psychology (47 men and 53 women) completed the 13-item Revised Cheek and Buss Shyness Scale (RCBSS; Cheek, 1983) and the Beck Depression Inventory. A measure of self and environment exploration, the Career Exploration Survey (CES; Stumpf et al., 1983) was used to assess 16 domains of exploration. Furthermore, academic self-esteem, vocational maturity and vocational self-concept were assessed. Results revealed that shyness was correlated with dysphoria but not academic self-esteem. However, shy students were less likely to have a crystallized vocational self concept, a mature attitude towards career planning, or to explore career options. Interestingly, dysphoria had no relationship with career development variables beyond the effects of shyness. However, because a full diagnostic interview or assessment was not conducted, the impact of shyness and dysphoria cannot be accounted for separately. Therefore, other psychiatric variables such as depression may have impacted career development to a degree similar as shyness.

In summary, the studies reviewed here suggest some evidence of occupational impairment as a result of childhood shyness. In one study, men that meet this description suffered from delayed entry into a stable career that predicted lower achievement and occupational stability (Caspi et al., 1988). In addition, women with a history of childhood shyness are more likely either to have no work history or to terminate employment at marriage or childbirth. Furthermore, shyness may limit career interests. Shy adults list fewer interpersonally oriented occupations when asked to list

occupations of interest, more indecision of career choice, and less help seeking regarding career information. Finally shyness in adulthood was found to be related to dysphoria and to measures of career development. Shy adults are less likely to engage in career exploration, are less mature about seeking employment, and have a less concrete vocational self concept. An additional source of information is found in studies that directly assess social phobia.

Social Phobia and Occupational Functioning

With respect to social phobia, studies have documented the existence of general occupational impairment in samples of adults diagnosed with this disorder (Turner et al., 1986; Schneier et al., 1994; Stein et al., 2000; Van Velzen, Emmelkamp, & Scholing, 2000). For example, Stein et al. (2000) reported that half of all socially phobic patients indicated that their social phobia interfered "some" or "a lot" with their ability to obtain a job. In addition, roughly one-fifth reported that they turned down a job or promotion because of their social fears.

Turner et al. (1986) assessed 21 patients (15 women, 6 men) with a DSM-III diagnosis of social phobia in a study designed to examine the impact of this disorder on life functioning. While 69.2 % of the sample felt that their social fears impact general social relationships, and 84.6 % reported impairment in academic functioning, the most widely endorsed area of impairment was occupational functioning where 92.3 % of the sample reported impairment. Types of functioning included the "inability to make informal suggestions in staff meetings and to make presentations before small or large groups; all resulting in lack of career advancement or being passed over for promotion"

(Turner et al., 1986). This early study set forth the notion that social phobia can be a severe disorder, impacting multiple areas of patients' lives. Although almost the entire sample endorsed occupational impairment, details such as frequency and specific levels of distress regarding this dysfunction were not assessed.

Van Velzen et al. (2000) studied differences in impairment between social phobia and avoidant personality disorder. Included in the study were 93 socially phobic adults, of whom 18 (19.4%) had specific social phobia and 75 (80.6%) had generalized social phobia. The sample was divided into groups consisting of patients who were diagnosed with social phobia specific subtype without a personality disorder (n=15); generalized social phobia without a personality disorder (n=28); generalized social phobia with a single diagnosis of avoidant personality disorder (n=24); and generalized social phobia with one or more personality disorders other than avoidant personality disorder (n=23). In addition to measures of psychopathology, social functioning was assessed via the Groningen Social Disability Schedule (GSDS; Wiersma, de Jong, Kraaijkamp, & Ormel, 1990). This measure includes an occupational role assessment that is used to examine the dimensions of daily routine among those who are employed, performance, and relationships with colleagues; and activities directed at securing a job among those who are unemployed (Van Velzen et al., 2000).

Findings indicated that those with generalized social phobia and avoidant personality disorder were more impaired in occupational functioning than those with generalized social phobia alone. In addition, socially phobic patients with more than one personality disorder had a greater level of impairment in occupational functioning when compared to the generalized social phobia group and the discrete social phobia

group. Thus, one might conclude that as level of pathology increases, levels of impairment in occupational functioning follows. With regard to the first finding, it may be assumed that the socially phobic patients with a diagnosis of avoidant personality disorder experience a greater level of social anxiety, and thus social impairment could be contributing to greater occupational impairment (it was reported that this group experienced a greater number of social anxious cognitions and a trend toward greater social avoidance). However, because virtually every personality disorder was represented in the social phobia and “other personality disorder group”, it is impossible to identify whether any other specific disorder might have accounted for the most variance with regard to occupational impairment. Furthermore, without the use of healthy controls, it is not possible to determine whether the level of impairment reported represents an elevation over the level of work problems found in the general population.

Additional data on the impact of social phobia on occupational functioning can be determined by comparing patients with social phobia to those with a different type of disorder or medical problem. Such a comparison allows one to determine if the same level of impairment is found in anyone with a medical disorder and not just a psychiatric disorder. In one study, 65 patients with social phobia and 51 patients with depression and comorbid social phobia were compared to 65 patients with a history of herpetic infection (Wittchen & Beloch, 1996). Functional impairment in social roles such as days unable to work, reduced work performance, and impairment in social interaction was assessed using the Liebowitz Social Disability Scale and the Composite International Diagnostic Interview Disability Module. Other measures such as the Medical Outcomes Study Short Form 36 (SF-36), Quality of Life Inventory (QOL) and

the Illness Intrusiveness Rating Scale assessed the impact of health on functioning and life enjoyment.

Results revealed that socially phobic individuals with and without comorbid depression reported significantly greater reduction in work productivity compared to those in the control sample. Compared to those with a history of herpetic infection and a separate sample of depressed outpatients, only socially phobic patients exhibited quality of life impairment similar to depressed outpatients. In terms of general impairment in functioning, 23.1% of the social phobia group was severely impaired and 24.6% showed moderate impairment while this held true for only 4.5% of the control group. Furthermore, other significant findings revealed that there were three times as many unemployed participants in the socially phobic group compared to patients with a herpetic infection, and socially phobic adults reported more significant impairments in work performance as well as more missed work hours due to mental problems. Thus, compared to those with a history of a potentially socially embarrassing disorder (herpes infection), socially phobic adults experience more work productivity problems as well as problems with unemployment.

Bruch, Fallon, and Heimberg (2003) used socially phobic participants and nonanxious controls to examine differences in occupational adjustment. These researchers used a cognitive appraisal approach as a theoretical rationale for choosing variables related to occupational adjustment. According to this approach, the patients' beliefs that neutral or ambiguous cues are actually indications of negative evaluation by others and the belief that their own behaviors will result in negative consequences might be the cause of occupational impairment. It was hypothesized that social phobia would

likely have a negative impact on career choice, career entry, and adaptation to work. The sample consisted of 113 socially phobic patients (83 generalized and 30 nongeneralized) with an average age of 34.5 years. With regard to gender, the study included 53 women and 60 men. All patients in the clinical sample were diagnosed by a psychologist or advanced doctoral student in clinical psychology using the Anxiety Disorders Interview Schedule for DSM-IV, Lifetime Version (ADIS-IV-L). In addition, a community college and University at Albany, State University of New York personnel recruited control group consisting of 32 women and 21 men was used.

A variety of measures were used in this study. The Occupational Alternatives Question (OAQ; Slaney, 1980) assessed participant's occupational preferences and was coded using a three letter Holland first choice occupational code. This code represented the participants' first choice of a list of self-generated occupations. Next, the code was compared to the participants' current or most recent job. Congruence between codes was calculated with scores ranging from 0 to 28 with higher scores being indicative of greater congruence. The degree to which each participant's current occupation was interpersonally oriented was assessed based on Phillip and Bruch's (1998) interpersonal orientation index. A measure of underemployment was obtained by comparing the participant's level of formal education and training and the participant's General Educational Development (GED) rating for the participant's current actual job. Furthermore, a retrospective rating of anxiety when each participant first started their job and a job satisfaction rating was obtained. Finally, the Modified Minnesota Satisfactoriness Scale (MSS), a 28 item measure which is intended to be rated by the employee's immediate supervisor and assesses employee work behavior and

performance was rated by each patient with instructions to rate how their supervisors would rate them.

Comparisons between socially phobic participants and normal controls revealed no significant differences with regard to congruence between expressed occupational interest and current occupation. Furthermore, among males with generalized social phobia, nongeneralized social phobia and no anxiety disorder there were no differences in interpersonal orientation of occupation. However, among women, there was a difference between generalized social phobics and controls such that women with generalized social phobia showed a greater avoidance of interpersonally oriented occupations. In addition, both generalized and nongeneralized social phobics had higher rates of underemployment than those in the nonanxious control group. Furthermore, with regard to retrospective report of anxiety when first starting the job, only generalized social phobics reported higher anxiety than nonanxious controls. Both groups of social phobics reported that their supervisors would rate them as less dependable than the control group. However, generalized social phobics reported that their supervisors would rate them as less able to conform to work role demands and be less likely to recommend them for advancement than both nongeneralized social phobics and normal controls. There were no differences between nongeneralized social phobics and normal controls on either of these measures. Finally, after controlling for level of education, there were no differences among groups for job satisfaction.

This study is one of the first to directly compare socially phobic patients with nonanxious controls on a variety of work related variables. The results indicate significant impairment with regard to possible underemployment and perceived

supervisor evaluation regarding work ability among socially phobics of either subtype. In addition, among those with generalized social phobia areas of impairment included perceived supervisor evaluation regarding career advancement and ability to conform to work role demands, anxiety when starting jobs, and among women in this sample avoidance of interpersonally oriented occupations. A limitation of the study is that normal controls were only screened for social phobia so characteristics of the sample with regard to other forms of psychopathology are unknown. It could be that some of these controls had psychiatric problems other than social phobia which had an effect on occupational functioning variables, thus affecting non-significant differences between groups. In addition, using perceived supervisor evaluation and retrospective report of anxiety when starting a job is subject to influence by participants' current mental state and is less objective than prospective measurement.

Instructions for Daily Work Diary

The purpose of this diary is to understand social interactions that occur at work. Please complete the diary at the end of the work day. When we ask you about social interactions, we mean face to face conversations (simply greeting a person in the hallway and continuing to walk by is not considered an interaction for the purpose of this assessment).

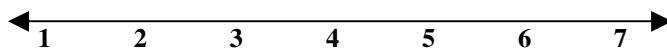
Thank you.

Name: _____ **Daily Work Diary** Date: _____

Number of co-workers with whom you interacted at work today: _____

Of these, how many interactions did you initiate? _____

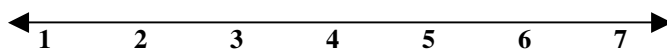
How nervous were you during interactions with co-workers? (1= none....4= moderate.....7= severely anxious)



Number of superiors with whom you interacted at work today: _____

Of these, how many interactions did you initiate? _____

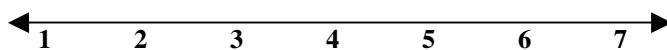
How nervous were you during interactions with superiors? (1= none....4= moderate.....7= severely anxious)



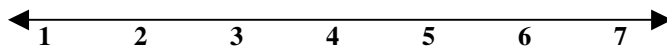
In how many group meetings did you take part today? _____

How many times did you speak during these meetings? _____

How nervous were you just attending the meetings? (1= none....4= moderate.....7= severely anxious)

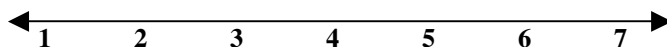


How nervous were you speaking during these meetings (if you spoke)? (1= none....4= moderate.....7= severely anxious)



How many times today did you refuse a request from a co-worker or superior? _____

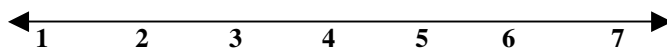
How nervous were you refusing requests from others? (1= none....4= moderate.....7= severely anxious)



Was there a time today when you wanted to communicate with a co-worker but could not because you felt too nervous? YES NO

Was there a time today when you wanted to communicate with a superior but could not because you felt too nervous? YES NO

Overall, how uncomfortable did you feel regarding social situations at work today? (1= none....4= moderate.....8= severely anxious)



References

- Alden, L.E., & Wallace, S.T. (1995). Social phobia and social appraisal in successful and unsuccessful social interactions. *Behaviour Research & Therapy*, 33, 497-505.
- Andrews, G., & Peters, L. (1998). *The CIDI-Auto: A computerised diagnostic interview for psychiatry, discussion paper*. Sydney, Australia: World Health Organization.
- Arntz, A., Van Beijsterveldt, B., Hoekstra, R., and Hofman, A. (1992). The interrater reliability of a Dutch version of the Structured Clinical Interview for DSM III-R Personality Disorders. *Acta Psychiatrica Scandinavica*, 85, 394-400.
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Beidel, D.C., Ferrell, C., Alfano, C., & Yeganeh, R. (2001). The Treatment of Childhood Social Anxiety Disorder. In F. Schneier (Ed), *Psychiatric Clinics of North America*.
- Beidel, D.C., & Turner, S.M. (1998). *Shy children, phobic adults: Nature and treatment of social phobia*. Washington, DC: American Psychological Association.
- Beidel, D.C., & Turner, S.M. (1999). The natural course of shyness and related syndromes. In L.A. Schmidt & J. Schulkin (Eds), *Extreme Fear, Shyness, and Social Phobia: Origins, Biological Mechanisms, and Clinical Outcomes*.
- Beidel, D. C., Turner, S. M., & Cooley, M. R. (1993). Assessing reliable and clinically significant change in social phobia: Validity of the Social Phobia and Anxiety Inventory. *Behaviour Research and Therapy*, 31, 331-337.

Blanchard, J.J., & Brown, S.B. (1998). Structured diagnostic interview schedules. In C.R. Reynolds (Ed.), *Comprehensive clinical psychology, Volume 3: Assessment* (pp. 97-103). Elsevier Science.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary Methods: Capturing life as it is lived. *Annual Review of Psychology*, 54, 579-617.

Bruch, M.A., Fallon, M., & Heimberg, R.G. (2003). Social Phobia and Difficulties in Occupation Adjustment. *Journal of Counseling Psychology*, 50, 109-117.

Caspi, A., Elder, G., & Bem, D. (1988). Moving away from the world: Life course patterns in shy children. *Developmental Psychology*, 24, 824-831.

Caplan, R., Cobb, S., French, J., Harrison, R., & Pinneau, S. (1975). *Job demands and worker health*. Ann Arbor: University of Michigan, Institute for Social Research.

Cheek, J. M. (1983). *The revised Cheek and Buss Shyness Scale*. Unpublished manuscript, Wellesley College, Wellesley, MA.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. New Jersey: Lawrence Erlbaum Associates Inc.

Cooper, C.L., Dewe, P.J., & O'Driscoll, M.P. (2001). *Organizational stress: A review and critique of theory, research, and applications*. Thousand Oaks, CA: Sage Publications.

Crozier, R. (1979). Shyness as anxious self-preoccupation. *Psychological Reports*, 44, 959-962.

Day, A.L. & Jreige, S. (2002). Examining type a behavior pattern to explain the relationship between job stressors and psychosocial outcomes. *Journal of Occupational Health Psychology*, 7, 109-120.

Davidson, J.R.T., Potts, N.L.S., Richichi, E.A., Ford, S.M., Krishnan, K.R.R., Smith, R.D., & Wilson, W. (1991). The Brief Social Phobia Scale. *Journal of Clinical Psychiatry*, 52, 48-51.

DiNardo, P.A., Brown, T.A., & Barlow, D.H. (1995). *Anxiety Disorders Interview Schedule for DSM-IV (Lifetime Version)*. San Antonio, TX: Psychological Corporation.

Dobрева-Martinova (2002). Occupational role stress in the Canadian forces: Its association with individual and organizational well being. *Canadian Journal of Behavioural Science*, 34, 111-121.

Ekselius, L., Lindstrom, E., von Korrying, L., & Bodlund, O. (1994). SCID II interviews and the SCID screen questionnaire as diagnostics tools for personality disorders in DSM-III-R. *Acta Psychiatrica Scandinavica*, 90, 120-123.

Elovainio, M., Kivimaki, M., Steen, N., & Kalliomaki-Levanto, T. (2000). Organizational and individual factors affecting mental health and job satisfaction: A multilevel analysis of job control and personality. *Journal of Occupational Health Psychology*, 5, 269-277.

Evans, D.R. & Cope, W.E. (1989). *Manual for the Quality of Life Questionnaire*. North Tonowanda, New York: Multi-Health Systems Inc.

- First, M.B., Gibbon, M., Spitzer, R.L., Williams, J.B.W., & Benjamin, L.S. (1997). *Software Manual for the Computer-Assisted SCID II (CAS II) and the SCID II Patient Questionnaire (SCID II PQ) Computer Program*. American Psychiatric Press.
- Ganster, D., Fusilier, M., & Mayes, B. (1986) Role of social support in the experience of stress at work. *Journal of Applied Psychology*, 71,102-110.
- Garber, M.C., Erickson, S.R., Aikens, J.E., & Lawrence, J.B. (2004). The concordance of self-report with other measures of medication adherence: A summary of the literature. *Medical Care*, 42, 649-652.
- Gottfredson, G. D., Holland, J. L. & Ogawa, D. K. (1982). *Dictionary of Holland occupational codes* . Palo Alto, CA: Consulting Psychologists Press.
- Gottfredson, G.D., & Holland, J.L. (1996). *Dictionary of Holland occupational codes* . Odessa, FL: Psychological Assessment Resources.
- Hackman, J.R., & Oldham, G.R. (1975). Development of job diagnostic survey. *Journal of Applied Psychology*, 60, 159-170.
- Hamer, R.J., & Bruch, M.A. (1997). Personality factors and inhibited career development: Testing the unique contribution of shyness. *Journal of Vocational Behavior*, 50, 382-400.
- Heeb, J., & Gmel, G. (2005). Measuring alcohol consumption: A comparison of graduated frequency, quantity, frequency, and weekly recall diary methods in a general population. *Addictive Behaviors*, 30, 403-413.
- Heiser, N.A., Turner, S.M., & Beidel, D.C. (2002). Shyness: Relationship to social phobia and other psychiatric disorders. *Behaviour Research & Therapy*.

Henderson, L., & Zimbardo, P. (1998). Shyness. In *Encyclopedia of Mental Health*. San Diego, CA: Academic Press.

Herbert, J. D., Bellack, A. S., & Hope, D. A. (1991). Concurrent validity of the Social Phobia and Anxiety Inventory. *Journal of Psychopathology and Behavioral Assessment*, 13, 357-368.

Himle, J.A. & Hill, E.M. (1991). Alcohol abuse and the anxiety disorders: Evidence from the Epidemiologic Catchment Area Survey. *Journal of Anxiety Disorders*, 5, 237-245.

Hofmann, S.G., Gerlach, A.L., Wender, A., & Roth, W.T. (1997). Speech disturbances and gaze behavior during public speaking in subtypes of social phobia. *Journal of Anxiety Disorders*, 11, 573-585.

Holt, C.S., Heimberg, R.G., & Hope, D.A. (1992). Avoidant personality disorder and generalized subtype of social phobia. *Journal of Abnormal Psychology*, 101, 318-325.

Hutri, M. & Lindeman, M. (2002). The role of stress and negative emotions in an occupational crisis. *Journal of Career Development*, 29(1), 19-36.

Joiner, T.E. (1997). Shyness and low social support as interactive diatheses, with loneliness as mediator: Testing an interpersonal-personality view of vulnerability to depressive symptoms. *Journal of Abnormal Psychology*, 106, 386-394.

Justice, B, McBee, G, & Allen, R. (1977). Social Dysfunction and Anxiety. *The Journal of Psychology*, 97, 37-42.

Kahn, R.L., & Byosiene, P. (1992). Stress in organizations. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology*, 571-648. Chicago: Rand McNally.

Karasek, R.A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 258-308.

Kerr, M., Lambert, W.W., & Bem, D.J. (1996). Life course sequelae of childhood shyness in Sweden: Comparison with the United States. *Developmental Psychology*, 32, 1100-1105.

Kessler, R.C., Stein, M.B., & Berglund, P. (1998). Social phobia subtypes in the National Comorbidity Survey. *American Journal of Psychiatry*, 155, 613-619.

Kushner, M.G. & Sher, K.J. (1993). Comorbidity of alcohol and anxiety disorders among college students: Effects of gender and family history of alcoholism. *Addictive Behaviors*, 18, 543-552.

Laurenceau, J., Bolger, N., Barrett L., & Rovine, M.J. (2005). The interpersonal process model of intimacy in marriage: A daily-diary and multilevel modeling approach. *Journal of Family Psychology*, 19, 86-97.

Lee, R.M. & Robbins, S.B. (1998). The Relationship Between Social Connectedness and Anxiety, Self-Esteem, and Social Identity. *Journal of Counseling Psychology*, 45, 338-345.

Lee, R. M. & Robbins, S. B. (1995). Measuring belongingness: The Social Connectedness and Social Assurance Scales. *Journal of Counseling Psychology*, 42, 232-241.

Malow, R.M., West, J.A., Williams, J.L., & Sutker, P.B. (1989). Personality disorders classifications and symptoms in cocaine and opium addicts. *Journal of Consulting and Clinical Psychology, 57*, 765-767.

Meier, S.T. (1991). Tests of the construct validity of occupational stress measures with college students: Failure to support discriminant validity. *Journal of Counseling Psychology, 38*, 91-97.

Oltmanns, T.F., Melley, A.H., & Turkheimer, E. (2002). Impaired social functioning and symptoms of personality disorders assessed by peer and self-report in a nonclinical population. *Journal of Personality Disorders, 16*, 437-452.

Peters, L., & Andrews, G. (1995). A procedural validity study of the computerised version of the Composite International Diagnostic Interview. *Psychological Medicine, 25*, 1269-1280.

Peters, L., Clark, D., & Carroll, F. (1998). Are computerized interviews equivalent to human interviewers? CIDI-Auto versus CIDI in anxiety and depressive disorders. *Psychological Medicine, 28*, 893-901.

Phillips, S.D., & Bruch, M.A. (1988). Shyness and dysfunction in career development. *Journal of Counseling Psychology, 35*, 159-165.

Pilkonis, P.A. (1977). Shyness, public and private, and its relationship to other measures of social behavior. *Journal of Personality, 45*, 585-595.

Quinn, R.P., & Stainess, G.L. (1979). *The 1977 quality of employment survey*. Ann Arbor: University of Michigan, Survey Research Center, Institute for Social Research.

Rapee, R.M., & Lim, L. (1992). Discrepancy between self- and observer ratings of performance in social phobics. *Journal of Abnormal Psychology, 101*, 728-731.

Sanderson, W.C., Rapee, R.M., & Barlow, D.H. (1987, November). The DSM-III-R revised anxiety disorder categories: Descriptors and patterns of comorbidity. Paper presented at the annual meeting of the Association for Advancement of Behavior Therapy, Boston, MA.

Slaney, R.B. (1980). Expressed vocational choice and vocational indecision. *Journal of Counseling Psychology, 27*, 122-129.

Spector, P. (2002). Employee control and occupational stress. *Current Directions in Psychological Science, 11*(4), 133-136.

Spielberger, C.D., Gorsuch, R.L., Lushene, R., Bagg, P.R. & Jacobs, G.A. (1983). *Manual for the state-trait anxiety inventory*. Palo Alto: Consulting Psychologist Press.

Stein, M.B., & Kean, Y.M. (2000). Disability and quality of life in social phobia: Epidemiologic findings. *American Journal of Psychiatry, 157*, 1606-1613.

Stein, M.B., Torgrud, L.J., & Walker, J.R. (2000). Social phobia symptoms, subtypes, and severity: Findings from a community survey. *Archives of General Psychiatry, 57*, 1046-1052.

Turner, S.M., Beidel, D.C., Borden, J.W., Stanley, M.R., & Jacob, R.G. (1991). Social phobia: Axis I and II correlates. *Journal of Abnormal Psychology, 100*, 102-106.

Turner, S.M., Beidel, D.C., & Dancu, C.V. (1996). *SPAI: Social Phobia & Anxiety Inventory Manual*. New York: Multi-Health Systems Inc.

- Turner, S.M., Beidel, D.C., Dancu, C.V., & Keys, D.J. (1986). Psychopathology of social phobia and comparison to avoidant personality disorder. *Journal of Abnormal Psychology, 95*(4), 389-394.
- Turner, S. M., Beidel, D. C., Dancu, C. V., & Stanley, M. A. (1989). An empirically derived inventory to measure social fears and anxiety: The Social Phobia and Anxiety Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*, 35-40.
- Turner, S.M., Beidel, D.C., & Larkin, K.T. (1986). Situational determinants of social anxiety in clinic and non-clinic samples: Physiological and cognitive correlates. *Journal of Consulting and Clinical Psychology, 54*, 523-527.
- Turner, S.M., Beidel, D.C., & Townsley, R.M. (1990). Social phobia: Relationship to shyness. *Behaviour Research and Therapy, 28*, 497-505.
- Turner, S.M., Beidel, D.C., & Townsley, R.M. (1992). Social phobia: A comparison of specific and generalized subtypes and avoidant personality disorder. *Journal of Abnormal Psychology, 101*, 326-331.
- Van Velzen, C.J.M., Emmelkamp, P.M.G., & Scholing, A. (2000). Generalized social phobia versus avoidant personality disorder: Differences in psychopathology, personality traits, and social and occupational functioning. *Journal of Anxiety Disorders, 14*, 395-411.
- World Health Organization (1993). *Composite International Diagnostic Interview-Version 1.1*. Geneva: WHO.

Wiersma, D., de Jong, A., Kraaijkamp, H.J.M., & Ormel, J. (1990). An interview schedule for the assessment of disabilities in social role functioning: manual. Groningen: Groningen University, Department of Social Psychiatry.

Wittchen, H.U. (1994). Reliability and validity studies of the WHO Composite International Diagnostic Interview (CIDI): A critical review. *Journal of Psychiatric Research*, 28, 57-84.

Wittchen, H.U. & Beloch, E. (1996). The impact of social phobia on quality of life. *International Clinical Psychopharmacology*, 11, 15-23.

Yeganeh, R., Beidel, D.C., Turner, S.M., Pina, A.A., & Silverman, W.K. (2003). Clinical distinctions between selective mutism and social phobia: An investigation of childhood psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42, 1069-1075.

Zimbardo, P.G., Pilkonis, P.S., & Norwood, R.M. (1975). The social disease called shyness. *Psychology Today*, 8, 68-72.